

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Toxic compound, do not ingest or inhale. Avoid all contact with this material. Readily absorbed through skin.	

Section I. Chemical Product and Company Identification

Chemical Name	3-Chloroaniline		
Catalog Number	C0110	Supplier	TCl America 9211 N. Harborage St. Portland OR 1-800-423-8616
Synonym	Not available.		
Chemical Formula	C ₆ H ₄ NH ₂ Cl		
CAS Number	108-42-9	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
3-Chloroaniline	108-42-9	Min. 99.0 (GC)	Not available.	Rat LD ₅₀ (oral) 256 mg/kg Mouse LD ₅₀ (oral) 334 mg/kg Rat LD ₅₀ (dermal) 250 mg/kg Rat LC ₅₀ (inhalation) 150 ppm/4H Mouse LC ₅₀ (inhalation) 550 mg/kg

Section III. Hazards Identification

Acute Health Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Not available. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	540 °C (1004 °F)
Flash Points	118 °C (244.4 °F).	Flammable Limits	Not available.
Combustion Products	These products include toxic carbon oxides (CO,CO ₂), nitrogen oxides (NO _x), halogenated compounds WARNING: Highly toxic HCl gas is produced during combustion.		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

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Emergency phone number (800) 424-9300

Section VI. Accidental Release Measures

Spill Cleanup Instructions Toxic material. Material is readily absorbed through skin. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information TOXIC. READILY ABSORBED THROUGH SKIN. Keep locked up. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, acids.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.

Personal Protection Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.



Exposure Limits Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, colorless.)	Solubility	Miscible with ethanol, ether, acetone. Soluble in other organic solvents. Very slightly soluble in water.
Specific Gravity	1.22 (water=1)		
Molecular Weight	127.57	Partition Coefficient	Log P _{ow} : 2
Boiling Point	230 °C (446 °F)	Vapor Pressure	9 Pa (@ 20 °C)
Melting Point	-10 °C (14 °F)	Vapor Density	4.4 (Air = 1)
Refractive Index	1.5920 to 1.5960	Volatility	Not available.
Critical Temperature	Not available.	Odor	Characteristic.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability This material is stable if stored under proper conditions. (See Section VII for instructions)

Conditions of Instability Avoid excessive heat and light.

Incompatibilities Reactive with strong oxidizing agents, acids, acid chlorides, and acid anhydrides, chloroformates.

Section XI. Toxicological Information

RTECS Number BX0350000

Routes of Exposure Eye Contact. Ingestion. Inhalation.

Toxicity Data
 Rat LD₅₀ (oral) 256 mg/kg
 Mouse LD₅₀ (oral) 334 mg/kg
 Rat LD₅₀ (dermal) 250 mg/kg
 Rat LC₅₀ (inhalation) 150 ppm/4H
 Mouse LC₅₀ (inhalation) 550 mg/kg

Chronic Toxic Effects
CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
 Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Acute Toxic Effects
 Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death.
 Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	<p>3-Chloroaniline's production and use as an intermediate for azo dyes and pigments, pharmaceuticals, insecticides, and agricultural chemicals may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 0.066 mm Hg at 25 deg C indicates 3-chloroaniline will exist solely as a vapor in the ambient atmosphere. Vapor-phase 3-chloroaniline will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 5.1 hours. 3-Chloroaniline absorbs light with wavelengths >290 nm and may be susceptible to direct photolysis by sunlight. If released to soil, 3-chloroaniline is expected to have moderate mobility based upon an estimated Koc of 250. However, aromatic amines are expected to bind strongly to humus or organic matter in soils due to the high reactivity of the aromatic amino group, suggesting that mobility may be much lower in some soils. 3-Chloroaniline may undergo covalent chemical bonding with humic materials which results in its chemical alteration and tight adsorption. There is evidence to suggest that this complexing may extend the residual life of these substances in soil for as much as 10 years. Volatilization from moist soil surfaces is expected to occur based upon a Henry's Law constant of 1.0×10^{-6} atm-cu m/mole. However, adsorption to soil may attenuate volatilization. The pKa of 3-chloroaniline is 3.52, indicating that this compound will primarily exist in its nonionic form in the environment. 3-Chloroaniline is not expected to volatilize from dry soil surfaces based upon its vapor pressure. When 3-chloroaniline (30 ppm) was incubated in Guelph loam with water added to 60% water-holding capacity, levels declined rapidly for 2 weeks after which time the rate of loss decreased. The percent of 3-chloroaniline remaining in soil after 2 and 8 weeks were 38% and 18%, respectively. If released into water, 3-chloroaniline may adsorb to suspended solids and sediment based upon the estimated Koc. In addition, 3-chloroaniline may undergo chemical bonding with humic materials in the water column and in the sediment. In 3-day cultivation tests using 2 different river waters from Japan and two different sea waters, 50% of initial 3-chloroaniline was degraded; the degradation was paralleled by growth of microbes. A biotransformation half-life of 0.4 year was determined for 3-chloroaniline in laboratory studies using two pond and one river water samples obtained near Athens, GA. Volatilization from water surfaces is expected to occur based upon this compound's Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 42 and 310 days, respectively. However, volatilization from water surfaces is expected to be attenuated by adsorption to suspended solids and sediment in the water column. Measured BCF values ranging from 0.8 to 11.5 suggests the potential for bioconcentration in aquatic organisms is low. Hydrolysis is not expected to be an important environmental fate process since this compound lacks functional groups that hydrolyze under environmental conditions. Irradiation of an aqueous solution of 3-chloroaniline in a quartz tube with a fluorochemical lamp (wavelengths above 300 nm) resulted in a photodegradation half-life of 2.6 hours. Occupational exposure to 3-chloroaniline may occur through inhalation and dermal contact with this compound at workplaces where 3-chloroaniline is produced or used. Monitoring data indicate that the general population may be exposed to 3-chloroaniline via ingestion of food and drinking water.</p>

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.
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Section XIV. Transport Information

DOT Classification	DOT Class 6.1: Toxic material
PIN Number	UN2019
Proper Shipping Name	Chloroanilines, liquid
Packing Group (PG)	II
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). On DSL
EINECS Number (EEC)	203-581-0
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
Japanese Regulatory Data	ENCS No. 3-194

Section XVI. Other Information

Version 1.0
Validated on 10/16/2007.
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Notice to Reader**Continued on Next Page****Emergency phone number (800) 424-9300**

TCl laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.